II. AMENDMENTS TO THE CLAIMS:

Please cancel claims 1, 5, 6 and 11 without prejudice. Kindly amend claims 2-4, 7-10 and 12-17, and add new claims 18 and 19 as follows.

The following claims will replace all prior versions of claims in the present application.

LISTING OF CLAIMS:

1. (Cancelled)

2. (Currently Amended) A differential pressure type flowmeter comprising:

an orifice;

a detector disposed to detect ~~a~~ fluid pressure P1 on ~~an~~the upstream side of ~~the~~an orifice;

a detector disposed to detect ~~a~~ fluid pressure P2 on ~~a~~the downstream side of ~~the~~an orifice;

a detector disposed to detect ~~a~~ fluid temperature T on the upstream side of ~~the~~an orifice; and

a control computation circuit that computes~~to compute~~ a fluid's flow rate Q passing through ~~the~~an orifice with the pressure P1 and pressure P2 and temperature T detected by the aforementioned detectors, wherein the ~~aforementioned~~ control computation circuit is installed with a flow rate computation circuit employing~~wherewith~~ an equation $Q=C1 \bullet P1\sqrt{T} \bullet ((P2/P1)^m - (P2/P1)^n)^{1/2}$, ~~(~~where C1 is a proportional constant, and m and n are constant~~)~~, to compute fluid's flow rate Q, and further comprising a correction data memory circuit wherein changes in the pressure P2 on the downstream side of ~~the~~an orifice are obtained by actual measurements by the detector disposed to detect fluid pressure P2 on the downstream side of

the orifice ~~beforehand~~ and flow rate errors of the ~~aforementioned~~ fluid's flow rate ~~Q~~ are storable in the correction data memory circuit, and a flow rate correction computation circuit corrects~~to correct the aforementioned~~ computed fluid's flow rate Q with ~~the~~ correction data from the correction data memory circuit, thus the computed fluid's flow rate Q is~~being~~ corrected depending on changes of ~~a~~ pressure P2 on the downstream side of the~~an~~ orifice~~,~~ to output a corrected flow rate value ~~Q~~.

3. (Currently Amended) A differential pressure type flowmeter as claimed in Claim 2, wherein said control computation circuit further comprises

a pressure ratio computation circuit that computes~~to compute~~ a ratio of the~~a~~ fluid pressure P1 on the upstream side of the~~an~~ orifice and the~~a~~ fluid pressure P2 on the downstream side of the~~an~~ orifice;

a critical condition judgment circuit that judges~~to judge~~ a state of ~~a~~ fluid by comparing the ~~aforementioned~~ computed pressure ratio and a fluid's critical pressure ratio; and

a No.2 flow rate computation circuit that computes ~~to compute a~~ fluid's flow rate Q by using ~~the~~ equation Q=KP1~~,~~ ~~(~~where K is a proportional constant~~,~~ ~~)~~ when ~~the~~ fluid is under critical conditions, thus outputting the~~a~~ fluid's flow rate Q computed with the ~~aforementioned~~ No.2 flow rate computation circuit when ~~the~~ fluid is under critical conditions, and also outputting a fluid's flow rate value Q' corrected using~~with~~ the flow rate correction computation circuit when ~~the~~ fluid is under non-critical conditions.

4. (Currently Amended) A differential pressure type flowmeter characterized in that flow rate measurements are~~can be~~ performed with high accuracy over a wide flow rate range by combining a first differential pressure type flowmeter for measuring a flow rate

range of 100%-10% of the maximum flow rate range and a second differential pressure type flowmeter for measuring a flow rate range of 10%-1% of the maximum flow rate range, and by switching ~~a~~ fluid to be measured in accordance with the aforementioned flow rate ranges using a switching valve, to supply ~~the~~ fluid to ~~the~~the first and second differential pressure type flowmeters, wherein one of the first and second differential pressure type flowmeters is a differential pressure type flowmeter comprising:

an orifice;

a detector disposed to detect fluid pressure P1 on an upstream side of the orifice;

a detector disposed to detect fluid pressure P2 on a downstream side of the orifice;

a detector disposed to detect fluid temperature T on the upstream side of the orifice; and

a control computation circuit that computes a fluid's flow rate passing through the orifice with the pressure P1, wherein pressure P2 and temperature T are detected by the aforementioned detectors, and the fluid's flow rate Q is computed using equation $Q=C1 \bullet P1\sqrt{T} \bullet ((P2/P1)^{m} - (P2/P1)^{n})^{1/2}$, where C1 is a proportional constant, and m and n are constants ~~according to claim 1~~.

5. (Cancelled)

6. (Cancelled)

7. (Currently Amended) A differential pressure type flowmeter comprising: ~~characterized by that it is so constituted that by forming it with~~

(a) a valve body comprising ~~12 provided with~~

i. a fluid inlet; ~~a,~~

ii. a fluid outlet; ~~b,~~

iii. a first mounting hole, ~~17a~~ for a~~the~~ No.1 switching valve ~~10~~, formed in the valve body;

iv. a second mounting hole, ~~17b~~ for a ~~the~~ No.2 switching valve 11, formed in the valve body;

v. a third mounting hole, ~~18a~~ for a fluid pressure detector ~~2~~ disposed on an~~the~~ upstream side of an orifice, formed in the valve body;

vi. a fourth mounting hole, ~~18b~~ for a fluid pressure detector ~~3~~ disposed on a~~the~~ downstream side of the~~an~~ orifice, formed in the valve body;

vii. a fifth mounting hole, for a fluid temperature detector ~~4~~ disposed on the upstream side of the~~an~~ orifice, formed in the valve body;

viii. first, second and third fluid passages disposed to pass fluid from ~~16a, 16b and 16c for directly passing through~~ the~~a~~ fluid inlet through the valve body, wherein ~~the~~ undersides of the first~~a~~ mounting hole ~~17a~~ for the No.1 switching valve 10, the third~~a~~ mounting hole ~~18a~~ for the~~a~~ fluid pressure detector ~~2~~ disposed on the upstream side of the~~an~~ orifice and the~~a~~ second mounting hole ~~17b~~ for the No.2 switching valve ~~11 which~~ are made in an~~the~~ interior of the ~~aforementioned~~ valve body 12; ~~,~~

ix. a fourth fluid passage disposed to communicate with ~~16f for communication of~~ the underside of the first~~a~~ mounting hole ~~17a~~ for the No.1 switching valve and the underside of the second~~a~~ mounting hole ~~17b~~ for the No.2 switching valve; ~~11,~~

x. a fifth fluid passage disposed to communicate with ~~16c for communication of~~ the underside of the second~~a~~ mounting hole ~~17b~~ for the No.2 switching valve ~~11~~ and the underside of the fourth~~a~~ mounting hole ~~18b~~ for the fluid pressure detector ~~3~~ disposed on the downstream side of the~~an~~ orifice; ~~,~~ and

xi. a sixth fluid passage ~~16d~~ disposed to communicate with~~for communication of~~ the underside of the fourth~~a~~ mounting hole ~~18b~~ for the pressure detector ~~3~~ disposed on the downstream side of the~~an~~ orifice and the~~a~~ fluid outlet; ~~b,~~

(b) the~~a~~ fluid pressure detector disposed ~~2~~ on the upstream side of the~~an~~ orifice and fixed to the third mounting hole; ~~and~~

(c) the~~a~~ fluid pressure detector disposed on the downstream side of the orifice and ~~3~~ fixed to the fourth mounting hole; ~~aforementioned mounting holes 18a and 18b respectively,~~

(d) the~~a~~ fluid temperature detector disposed4 on the upstream side of the~~an~~ orifice and fixed to the fifth mounting hole; ~~,~~

(e) the No.1 switching valve fixed to the first mounting hole, wherein the No.1 switching valve conducts ~~10 wherewith~~ opening and closing ~~are conducted~~ between the third~~aforementioned~~ fluid passage ~~16e~~ and the fourth fluid passage; ~~16f,~~

(f) the No.2 switching valve fixed to the second mounting hole, wherein the No.2 switching valve conducts ~~11 wherewith~~ opening and closing ~~are conducted~~ between the second~~aforementioned~~ fluid passage ~~16b~~ and the fifth fluid passage; ~~16c,~~ wherein the orifice comprises an orifice ~~1'~~ for ~~a~~ small flow quantity installed halfway on the fourth~~to the aforementioned~~ fluid passage and ~~16f,~~ an orifice ~~1"~~ for ~~a~~ large flow quantity installed on the first~~aforementioned~~ fluid passage ~~16a~~ or on the second fluid passage ~~16b~~, and a control computation circuit computes~~to compute a~~ fluid's flow rate Q passing through the~~an~~ orifice ~~1'~~ for ~~a~~ small flow quantity and the~~an~~ orifice ~~1"~~ for ~~a~~ large flow quantity depending on ~~the~~ pressure P1, pressure P2 and temperature T detected by the aforementioned fluid pressure detectors ~~2 and 3~~ and the temperature detector 4, respectively, ~~by~~ using ~~the~~ equation $Q=C1 \bullet P1/\sqrt{T} \bullet ((P2/P1)^m - (P2/P1)^n)^{1/2}$, where C1 is a proportional constant, and m and n are constants, so that when~~thus making it possible that a~~ flow rate measured by the differential pressure type flowmeter is in a large flow quantity range ~~is measured by closing~~ the

~~aforementioned~~ No.1 switching valve ~~10~~ is closed and ~~opening~~the No.2 switching valve ~~11~~ is opened, and when~~while a~~ flow rate measured by the differential pressure type flowmeter is in a small quantity range ~~is measured by opening~~ the ~~aforementioned~~ No.1 switching valve ~~10~~ is opened and ~~closing~~ the No.2 switching valve ~~11~~ is closed.

8. (Currently Amended) A differential pressure type flowmeter as claimed in Claim 4, wherein the switching valve comprises a No.1 switching valve including a first driving cylinder and a No.2 switching valve including a second driving cylinder, wherein ~~it is so constituted that~~ either one of the No.1 switching valve ~~10~~ and the~~or~~ No.2 switching valve ~~11~~ is ~~made to be~~ a normal/close type valve and the other one is a normal/open type valve, and operating fluid is supplied from one control electromagnetic valve ~~Mv~~ to the first driving cylinder and the second driving cylinder~~driving cylinders 10a and 10b of both switching valves~~.

9. (Currently Amended) A differential pressure type flowmeter as claimed in Claim 7, wherein when the differential pressure type flowmeter measures ~~it is so made that~~ a flow rate range up to 100%-10% of the maximum flow rate then ~~is measured by closing~~ the No.1 switching valve 10 is closed and ~~opening~~ the No.2 switching valve is opened~~11~~, and when the differential pressure type flowmeter measures~~while~~ a flow rate up to 10%-1% of the maximum flow rate then~~is measured by opening~~ the No.1 switching valve is opened~~10~~ and ~~closing~~ the No.2 switching valve is closed~~11~~.

10. (Currently Amended) A differential pressure type flowmeter as claimed in Claim ~~7~~18, wherein the~~further comprising a pressure~~ detector disposed~~2~~ to detect ~~a~~ pressure on the upstream side of the~~an~~ orifice, the~~a pressure~~ detector disposed~~3~~ to detect ~~a~~ pressure on

the downstream side of thean orifice, and thea temperature detector disposed to detect a temperature on the upstream side of thean orifice, are made sharable bywith both the first and the second differential pressure type flowmeters.

11. (Cancelled)

12. (Currently Amended) A differential pressure type flow controller comprising:

a control valve part equipped with a valve driving part;

an orifice installed on athe downstream side of the control valve part;thereof,

a detector disposed to detect a fluid pressure P1 on anthe upstream side of thean orifice;

a detector disposed to detect a fluid pressure P2 on athe downstream side of thean orifice;

a detector disposed to detect a fluid temperature T on the upstream side of thean orifice; and

a control computation circuit equipped with a flow rate comparison circuit that computeswherewith the fluid's flow rate Q is computed by using the pressure P1, pressure P2 and temperature T detected by the aforementioned detectors, and athe difference between thea computed flow rate Q and a set flow rate Qs is computed by the control computation circuit, and the aforementioned control computation circuit is equipped with a flow rate computation circuit that computeswherewith a fluid's flow rate Q usingis computed by the equation $Q=C1 \bullet P\sqrt{T} \bullet ((P2/P1)^m \bullet (P2/P1)^n)^{1/2}$, (where C1 is a proportional constant, and m and n are constants), and further comprising a correction data memory circuit wherein changes of the pressure P2 on the downstream side of thean orifice are obtained by actual measurements by the detector disposed to detect pressure P2 on the downstream side of the

orifice ~~beforehand~~ and flow rate errors of the ~~aforementioned~~ fluid's flow rate Q are storable in the correction data memory circuit, and the~~a~~ flow rate correction computation circuit corrects~~to correct~~ the ~~aforementioned~~ computed fluid's flow rate Q using~~with the~~ correction data from the correction data memory circuit, thus the~~a~~ fluid's flow rate Q is~~being~~ corrected depending on ~~the~~ changes of ~~a~~ pressure P2 on the downstream side of the~~an~~ orifice, and the corrected flow rate value Q' is~~Q being~~ inputted to the ~~aforementioned~~ flow rate comparison circuit to compute a~~the~~ difference of ~~the~~ flow rates $\Delta Q=Q'-Qs$.

13. (Currently Amended) A differential pressure type flow controller as claimed in Claim 12, wherein the control computation circuit further comprises

a pressure ratio computation circuit ~~to compute~~ that computes a pressure~~the~~ ratio of ~~a~~ fluid pressure P1 on the upstream side of the~~an~~ orifice and ~~a~~ fluid pressure P2 on the downstream side of the~~an~~ orifice;~~,~~

a critical conditions judgment circuit that judges~~to judge~~ a state of ~~a~~ fluid by comparing the ~~aforementioned~~ computed pressure ratio and a fluid's critical pressure ratio;~~,~~ and

a No.2 flow rate computation circuit that computes ~~to compute a~~ fluid's flow rate Q ~~by~~ using ~~the~~ equation $Q=KP1$, ~~(~~where K is a proportional constant,~~)~~ when ~~the~~ fluid is under critical conditions, and then the~~a~~ fluid's flow rate Q computed by the ~~aforementioned~~ No.2 fluid computation circuit when the fluid is under critical conditions and a fluid's corrected flow rate value Q' ~~corrected~~ from the flow rate correction computation circuit when the fluid is under non-critical conditions are inputted respectively to the ~~aforementioned~~ flow rate computation circuit.

14. (Currently Amended) A differential pressure type flowmeter characterized in that flow rate measurements are~~can be~~ performed with high accuracy over a wide flow rate range by combining a first differential pressure type flowmeter for measuring a flow rate range of 100%-10% of the maximum flow rate range and a second differential pressure type flowmeter for measuring a flow rate range of 10%-1% of the maximum flow rate range, and by switching ~~a~~ fluid to be measured in accordance with the aforementioned flow rate ranges using a switching valve, to supply ~~the~~ fluid to the first and second differential pressure type flowmeters, wherein one or both of the first and second differential pressure type flowmeters is a differential pressure type flow meter according to claim 2.

15. (Currently Amended) A differential pressure type flowmeter characterized in that flow rate measurements are~~can be~~ performed with high accuracy over a wide flow rate range by combining a first differential pressure type flowmeter for measuring a flow rate range of 100%-10% of the maximum flow rate range and a second differential pressure type flowmeter for measuring a flow rate range of 10%-1% of the maximum flow rate range, and by switching ~~a~~ fluid to be measured in accordance with the aforementioned flow rate ranges using a switching valve, to supply ~~the~~ fluid to the first and second differential pressure type flowmeters, wherein one or both of the first and second differential pressure type flowmeters is a differential pressure type flowmeter according to claim 3.

16. (Currently Amended) A differential pressure type flowmeter as claimed in Claim 7, wherein ~~it is so constituted that~~ either one of the No.1 switching valve and the~~10 or~~ No.2 switching valve~~11~~ is ~~made to be~~ a normal/close type valve comprising a first driving cylinder and the other one is a normal/open type valve comprising a second driving cylinder, and operating fluid is supplied from one control electromagnetic valve~~Mv~~ to the first driving

cylinder and the second driving cylinder~~driving cylinders 10a and 10b of both switching valves~~.

17. (Currently Amended) A differential pressure type flowmeter as claimed in Claim 8, wherein the~~further comprising a pressure~~ detector disposed~~2~~ to detect ~~a~~ pressure on the upstream side of the~~an~~ orifice, the~~a~~ pressure detector disposed~~3~~ to detect ~~a~~ pressure on the downstream side of the~~an~~ orifice, and the~~a temperature~~ detector disposed to detect ~~a~~ temperature on the upstream side of the~~an~~ orifice~~,~~ are made sharable by~~with~~ both the first and second differential pressure type flowmeters.

18. (NEW) A differential pressure type flowmeter characterized in that flow rate measurements are performed with high accuracy over a wide flow rate range by combining a first differential pressure type flowmeter for measuring a flow rate range of 100%-10% of the maximum flow rate range and a second differential pressure type flowmeter for measuring a flow rate range of 10%-1% of the maximum flow rate range, and by switching fluid to be measured in accordance with the aforementioned flow rate ranges using a switching valve, to supply fluid to the first and second differential pressure type flowmeters, wherein each of the first and second differential pressure type flowmeter comprises:

an orifice;

a detector disposed to detect fluid pressure P1 on an upstream side of the orifice;

a detector disposed to detect fluid pressure P2 on a downstream side of the orifice;

a detector disposed to detect fluid temperature T on the upstream side of the orifice; and

a control computation circuit that computes a fluid's flow rate by using pressure P1, pressure P2, and temperature T detected by the aforementioned detectors, and the fluid's flow

rate Q is computed by the control computation circuit using equation $Q=C1 \bullet P1\sqrt{T} \bullet ((P2/P1)^m - (P2/P1)^n)^{1/2}$, where C1 is a proportional constant, and m and n are constants.

19. (NEW) A differential pressure type flowmeter characterized in that flow rate measurements are performed with high accuracy over a wide flow rate range by combining a first differential pressure type flowmeter for measuring a flow rate range of 100%-10% of the maximum flow rate range and a second differential pressure type flowmeter for measuring a flow rate range of 10%-1% of the maximum flow rate range, and by switching fluid to be measured in accordance with the aforementioned flow rate ranges using a switching valve, to supply fluid to the first and second differential pressure type flowmeters, wherein each of the first and second differential pressure type flowmeters is a differential pressure type flowmeter comprising:

an orifice;

a detector disposed to detect fluid pressure P1 on an upstream side of the orifice;

a detector disposed to detect fluid pressure P2 on a downstream side of the orifice;

a detector disposed to detect fluid temperature T on the upstream side of the orifice; and

a control computation circuit that computes a fluid's flow rate using pressure P1, pressure P2, and temperature T detected by the aforementioned detectors, and the control computation circuit is equipped with a flow rate computation circuit that computes fluid's flow rate Q using equation $Q=C1 \bullet P1\sqrt{T} \bullet ((P2/P1)^m - (P2/P1)^n)^{1/2}$, where C1 is a proportional constant, and m and n are constants, and further comprising a correction data memory circuit wherein changes of pressure P2 on the downstream side of the orifice are obtained by actual measurement by the detector disposed to detect fluid pressure P2 on the downstream side of the orifice, and flow rate errors of the fluid's flow rate are storable in the

correction data memory circuit, and a flow rate correction computation circuit corrects the computed fluid's flow rate Q using correction data from the correction data memory circuit, thus computed fluid's flow rate Q is corrected depending on changes of pressure P2 on the downstream side of the orifice to output a corrected flow rate Q'.